Simulation model for compatibility of co-sited imt-advanced and point to multipoint services

Abstract :

3.5 GHz fixed wireless access system is a point-to-multipoint wireless technology providing broadband services. In this paper, point-to-multipoint fixed cellular service network structure such as Local Multipoint Distribution (LMDS) service is proposed to share same network area and frequency band (3400-3600 MHz) with the fourth generation of mobile (IMT-Advanced) represented by mobile Worldwide Interoperability for Microwave Access (WiMAX) service on base of co-sited systems. As a result of space and frequency domain sharing, harmful interference probability may be transpired between the two services. Different network cell size and different channel bandwidths were considered in dense urban area to investigate the intersystem interference effects based on the average interference to noise ratio INR as a fundamental criterion for coexistence and sharing coordination between different systems. Adjusting of antenna discrimination loss is also proposed to facilitate the frequency efficiency and accomplish frequency sharing.